Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently amended) A composition for use in nucleic acid synthesis, nucleic acid amplification, sequencing or restriction digestion methods, said composition comprising a mixture of reagents ~~at working concentrations~~, wherein said reagents are at least one thermostable enzyme, at least one nonionic detergent, and at least one buffer salt, wherein said reagents are present in said composition at concentrations for performing said methods without dilution, ~~and~~ wherein said composition has no nucleic acid molecules, and wherein said thermostable enzyme retains at least 90% of its enzymatic activity for at least 4 weeks when said composition is stored at about 20°C to 25°C.

2. (Currently amended) A composition for use in nucleic acid amplification, nucleic acid synthesis or sequencing methods, said composition comprising a mixture of reagents ~~at working concentrations~~, wherein said reagents are at least one thermostable DNA polymerase, at least one nonionic detergent, at least one buffer salt and at least one deoxynucleoside triphosphate, wherein said reagents are present in said composition at concentrations for performing said methods without dilution, ~~and~~ wherein said composition has no nucleic acid molecules, and wherein said thermostable DNA polymerase retains at least 90% of its enzymatic activity for at least 4 weeks when said composition is stored at about 20°C to 25°C.

3. (Currently amended) A composition for use in nucleic acid sequencing methods, said composition comprising a mixture of reagents ~~at working concentrations~~, wherein said reagents are at least one thermostable DNA polymerase, at least one deoxynucleoside triphosphate, at least one nonionic detergent, at least one dideoxynucleoside triphosphate and at least one buffer salt, wherein said reagents are present in said composition at concentrations for performing said methods without dilution, ~~and~~ wherein said composition has no nucleic acid molecules, and wherein said thermostable DNA polymerase retains at least 90% of its enzymatic activity for at least 4 weeks when said composition is stored at about 20°C to 25°C.

4. (Canceled)

5. (Currently amended) The composition of claim 2 or claim 3, wherein said thermostable DNA polymerase is selected from the group of thermostable DNA polymerases consisting of a *Taq* DNA polymerase, a *Tne* DNA polymerase~~,~~ and a *Tma* DNA polymerase~~, and mutants thereof~~.

6. (Currently amended) The composition of claim 2 or claim 3, wherein said thermostable DNA polymerase is selected from the group of thermostable DNA polymerases consisting of a *Pfu* DNA polymerase, a *Pwo* DNA polymerase, VENT™ DNA polymerase~~,~~ and DEEPVENT™ DNA polymerase~~, and mutants thereof~~.

7. (Original) The composition of claim 5, wherein said mixture further comprises DEEPVENT™ DNA polymerase or VENT™ DNA polymerase.

8. (Currently amended) The composition of claim 5, wherein the concentration of *Taq* DNA polymerase ~~or mutant thereof~~ is about 0.1 to 200 units per milliliter.

9. (Original) The composition of claim 8, wherein the concentration is about 20 units per milliliter.

10. (Currently amended) The composition of claim 5, wherein the concentration of *Tne* DNA polymerase ~~or mutant thereof~~ is about 0.1 to 200 units per milliliter.

11. (Original) The composition of claim 10, wherein the concentration is about 20 units per milliliter.

12. (Currently amended) The composition of claim 5, wherein the concentration of *Tma* DNA polymerase ~~or mutant thereof~~ is about 0.1 to 200 units per milliliter.

13. (Original) The composition of claim 12, wherein the concentration is about 20 units per milliliter.

14. (Currently amended) The composition of claim 6, wherein the concentration of VENT™ DNA polymerase ~~or mutant thereof~~ is about 0.1 to 200 units per milliliter.

15. (Original) The composition of claim 14, wherein the concentration is about 20 units per milliliter.

16. (Currently amended) The composition of claim 6, wherein the concentration of DEEPVENT™ DNA polymerase ~~or mutant thereof~~ is about 0.1 to 200 units per milliliter.

17. (Original) The composition of claim 16 wherein the concentration is about 20 units per milliliter.

18. (Currently amended) The composition of claim 6, wherein the concentration of *Pfu* DNA polymerase ~~or mutant thereof~~ is about 0.1 to 200 units per milliliter.

19. (Original) The composition of claim 18 wherein the concentration is about 20 units per milliliter.

20. (Currently amended) The composition of claim 6, wherein the concentration of *Pwo* DNA polymerase ~~or mutant thereof~~ is about 0.1 to 200 units per milliliter.

21. (Original) The composition of claim 20 wherein the concentration is about 20 units per milliliter.

22. (Original) The composition of claim 7, wherein the concentration of DEEPVENT™ DNA polymerase or VENT DNA polymerase is about 0.002 to 200 units per milliliter.

23. (Original) The composition of claim 22, wherein the concentration is about 0.40 units per milliliter.

24. (Canceled)

25. (Canceled)

26. (Original) The composition of claim 2 or claim 3, further comprising a magnesium salt.

27. (Canceled)

28. (Original) The composition of claim 2 or claim 3, wherein the concentration of said deoxynucleoside triphosphate is about 200 to about 300 micromolar.

29. (Original) The composition of claim 3, wherein the concentration of said dideoxynucleoside triphosphate is about 0.08 to about 5 micromolar.

30. (Currently amended) A nucleic acid amplification kit comprising one or more containers, wherein a first container contains a composition comprising a mixture of reagents ~~at working concentrations~~, wherein said reagents are at least one thermostable DNA polymerase, at least one buffer salt, at least one nonionic detergent, and at least one deoxynucleoside triphosphate, wherein said reagents are present in said composition at concentrations for performing said methods without dilution, ~~and~~ wherein said composition

has no nucleic acid molecules, and wherein said thermostable DNA polymerase retains at least 90% of its enzymatic activity for at least 4 weeks when said composition is stored at about 20°C to 25°C.

31. (Currently amended) A nucleic acid sequencing kit comprising one or more containers, wherein a first container contains a composition comprising a mixture of reagents ~~at working concentrations~~, wherein said reagents are at least one thermostable DNA polymerase, at least one buffer salt, at least one nonionic detergent, at least one deoxynucleoside triphosphate and at least one dideoxynucleoside triphosphate, wherein said reagents are present in said composition at concentrations for performing said methods without dilution, ~~and~~ wherein said composition has no nucleic acid molecules, and wherein said thermostable DNA polymerase retains at least 90% of its enzymatic activity for at least 4 weeks when said composition is stored at about 20°C to 25°C .

32. (Canceled)

33. (Original) A method of amplifying a nucleic acid molecule comprising contacting said nucleic acid molecule with the composition of claim 2.

34. (Canceled)

35. (Original) A method of sequencing a nucleic acid molecule comprising contacting said nucleic acid molecule with the composition of claim 3.

36. (Canceled)

37. (Currently amended) The method of ~~any one of claims~~ claim 33~~,~~ or claim 35 ~~and 36~~, wherein said nucleic acid molecule is larger than about 4 kilobases in size.

38. (Original) The method of claim 37, wherein said nucleic acid molecule is larger than about 7 kilobases in size.

39. (Original) The method of claim 38, wherein said nucleic acid molecule is larger than about 8 kilobases in size.

40-43. (Canceled)

44. (Original) The composition of claim 1, further comprising at least one antibody that specifically binds to said thermostable enzyme.

45. (Original) The composition of claim 2 or claim 3, further comprising at least one antibody that specifically binds to said thermostable enzyme.

46. (Original) The kit of claim 30 or claim 31, wherein said mixture of reagents further comprises at least one antibody that specifically binds to said thermostable DNA polymerase.

47. (Original) The kit of claim 30 or claim 31, further comprising one or more additional containers containing at least one antibody that specifically binds to said thermostable DNA polymerase.

48-53. (Canceled)

54. (Currently amended) The composition of claim ~~53~~ 1, wherein said at least one nonionic detergent is selected from the group consisting of TRITON X-100®, Brij 35, Tween 20 and Nonidet P-40 (NP-40).

55. (Currently amended) The composition of ~~claim 27~~ claim 2 or claim 3, wherein said at least one nonionic detergent is selected from the group consisting of TRITON X-100®, Brij 35, Tween 20 and Nonidet P-40 (NP-40).

56. (Canceled)

57. (Currently amended) The nucleic acid amplification kit of claim ~~56~~ 30, wherein said at least one nonionic detergent is selected from the group consisting of TRITON X-100®, Brij 35, Tween 20 and Nonidet P-40 (NP-40).

58. (Canceled)

59. (Currently amended) The nucleic acid sequencing kit of claim ~~58~~ 31, wherein said at least one nonionic detergent is selected from the group consisting of TRITON X-100®, Brij 35, Tween 20 and Nonidet P-40 (NP-40).